carried out for 20 minutes while driving the crystal at 2 MHz at an average power of 4 W (on time=0.2 sec., off time=0.8 sec.). The resulting average intensity was identical to that achieved using mechanical mixing of the chamber (vertical rotation with an incorporated bubble).

E1 cont

In the Claims:

Please enter the following amended claims 80, 83, 84, 93, 96 and 97:

E1

E2

80. A method of analyzing a sample in an integrated microfluidic device having at least two chambers in fluid communication, comprising:

supplying the sample into a first chamber of the integrated microfluidic device, wherein the first chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction including hybridization, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a first reaction in the first chamber;

moving the sample from the first chamber to the second chamber, wherein the second chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction including hybridization, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a second reaction in the second chamber, the second reaction being different from the first reaction; and

performing confocal microscopy on the hybridized sample using a reader device;

receiving a signal output from the reader device; and

analyzing the signal output with a digital computer to indicate a property of the sample.

E3

83. The method of claim 82, wherein the size based analysis comprises microcapillary electrophoresis.

84. The method of claim 80, wherein the confocal microscopy includes detecting an optical signal from fluorescently labeled targets located inside the device.

93. A method of analyzing a sample in an integrated microfluidic device having at least three chambers in fluid communication, comprising:

supplying the sample into a first chamber of the integrated microfluidic device, wherein the first chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction including hybridization, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a first reaction in the first chamber;

moving the sample to the second chamber, wherein the second chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction including hybridization, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a second reaction in the second chamber, the second reaction being different from the first reaction;

moving the sample to the third chamber, wherein the third chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction including hybridization, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a third reaction in the third chamber, the third reaction being different from both the first and second reactions;

performing confocal microscopy on the hybridized sample using a reader device

receiving a signal output from the reader device; and

analyzing the signal output with a digital computer to indicate a property of the sample.

96. The method of claim 95, wherein the size based analysis comprises microcapillary electrophoresis.

97. The method of claim 90, wherein the confocal microscopy comprises detecting an optical signal from fluorescently labeled targets located inside the device.